

CAUTION

- When attempting to classify damage to a structural member as negligible, be sure that the damage complies fully with the specified limits of negligible damage. Failure to do this may result in insufficient structural strength of the damaged member or members for critical conditions of flight.

1-15. **SCRATCHES.** Scratches in alclad material which do not extend beyond the coating can be classified as negligible. All alclad material furnished under specification AN-A-13 in gages of .064 and above have aluminum coats, which are 2-5 percent of nominal thickness, on each side of the sheet. On gages less than .064, there is a 5 percent coating on each side. Burnish all scratches before classifying them as negligible damage and then paint with zinc chromate primer. This will prevent corrosion of the exposed material and stress concentrations. Treat all scratches which penetrate beyond the clad coating as cracks.

1-16. **CRACKS.** Cracks and deep scratches must be drilled or trimmed out before attempting to classify them as negligible damage.

1-17. **DAMAGE REPAIRABLE BY PATCHING.**

1-18. **GENERAL.** The types of repair shown are divided into typical and specific repairs. Typical repairs shown in Appendix II of the handbook are repairs which are applicable to more than one section of the handbook; that is, access doors and skin patches are used on wings, tails and fuselages. Specific repairs are repairs which are applicable to a member in one section of the handbook only; for instance, a repair to horizontal stabilizer beam will be shown in Section III only. In either typical or specific repairs the repair should be followed as closely as is practicable. Fabric patches should be replaced by permanent metal patches or plugs as soon as practicable.

1-19. **REPAIRS OF STRUCTURAL MEMBERS.** Damage to structural members which exceeds the specified lim-

its of negligible damage must be repaired using the information included in this handbook. Repairs shown for structural members which have a specified limited length of damage are effective for lengths of damage equal to or less than the specified limit. If this length of damage is exceeded, insertion repairs or replacement must be made. If the repair of a member or members requires cutting back or removal of adjacent structure to make the repair, make certain that this adjacent structure is reattached to maintain the strength of the original structure.

1-20. **DAMAGE REPAIRABLE BY INSERTION.** Damage repairable by insertion will be in the text only when the repair limitations are such that the specified length of damage for patching the existing repair is exceeded, or when an insertion repair is necessary due to the arrangement of the original structure. For example, if damage occurred to a beam at a hinge bracket and the repair members would interfere with this hinge bracket, it would be necessary to make an insertion repair and to mount and maintain the proper alignment of the hinge bracket. When making an insertion repair, make certain the insertion member is of the same section and material as the original structure unless otherwise specified.

1-21. **DAMAGE NECESSITATING REPLACEMENT.** This classification of damage will be covered for structural components of the airplane that are damaged beyond repair, and/or can be readily replaced such as castings, forgings, extrusions, etc., and short structural members, such as stiffeners, ribs, hinge brackets, etc.

1-22. **AILERON UNBALANCE.** The ailerons are statically balanced within a maximum allowable unbalance of four inch-pounds. This balance must be maintained if repairs become necessary or if the surfaces are repainted.

1-23. **ELEVATOR UNBALANCE.** Partial dynamic and static balance of each elevator is provided, the maximum allowable unbalance being 25 inch-pounds for each elevator.

1-24. **RUDDER UNBALANCE.** The rudder is not statically balanced; however, in the event of repair, the static unbalance must not exceed 47 inch-pounds.